

FACT SHEET
(pursuant to NAC 445A.401)

Permittee Name: Decommissioning Services LLC

Site Name: Goldfield Project

Permit Number: NEV0060027 – Post-Closure Monitoring

A. Description of Facility

Location:

The facility is located in Esmeralda County, approximately one-half mile north of the town of Goldfield Nevada - Township 2 South, Range 42 East, Sections 25, 35 and 36; Township 2 South, Range 43 East, Sections 19 and 20; and Township 3 South, Range 42 East, Sections 1 and 2, Mount Diablo Baseline and Meridian.

General Description:

Mining operations and all closure activities have been completed; post-closure monitoring of the site has been ongoing since October 2002.

The facility consisted of a 22 acre heap leach pad, four open pits (Jumbo, Sheet-Ish, Combination and Red Top), one waste rock dump, four ponds, a process facility, and associated structures and roads.

The mine property encompassed approximately 242 acres, of which 174 acres are private and 68 acres are public BLM managed lands. The heap and process ponds are located on public land; the waste rock dump and pits are on private land.

Part of the closure program involved converting one pond into a long-term heap draindown evaporation cell (E-cell) and constructing a second. The heap and the evaporation cells are the only process components remaining. The metal process plant building, a wood framed shop building and several shipping containers were integrated into warehouse storage and will remain. Additionally, a small above ground fuel tank and pump, contained within a bermed and HDPE lined area, will remain. These remaining structures are located on private land and have been sold to Metallic Ventures.

B. Synopsis

Site History:

The Goldfield Mine is located within the historic Goldfield Mining District. Red Rock

Mining Corporation mined area historic waste dumps in 1989. The operation was closed in 1990 and sold to First Toronto Corporation. First Toronto placed the property into the assets of Giant Pacific which then reorganized Red Rock Mining Inc. American Resource Corporation (ARC) and Red Rock Mining Inc. entered into a 50/50 joint venture agreement in 1991 to place the Goldfield Mine property into production.

ARC then acquired a 78% interest in American Pacific Minerals, Ltd, (APML), formerly Red Rock Mining Inc., and became the operator of the Goldfield Mine.

In December 1995, ARC sold its interest to APML. APML then owned, through it's subsidiary APM USA, 100% of the Goldfield Mine.

In connection with the reorganization and sale, ARC entered into an Operator and Service Agreement with APM USA in which ARC agreed to manage the Goldfield Mine. In 1996, ARC merged with Rae Gold with ARC continuing as mine operator. In June 1998, financial problems led to the forced bankruptcy of ARC and Rea Gold. In October 1998, through the bankruptcy court, Decommissioning Services LLC was granted the mine purchase and continues to manage the site.

The first WPC Permit was issued to Red Rock Mining, Inc in December 1990. The permit expired in November 1995 and was renewed to APM USA in August 1997. The current permit expired August 8, 2002. Following receipt and approval of the Final Closure Report on October 31, 2002, the site was placed in a post-closure monitoring status.

Geology:

Waste rock includes the Siebert Tuff unit, which consists of sedimentary breccia, volcanic conglomerate and sandstone, and tuffaceous conglomerate, sandstone and shale, comprised of locally derived porphyritic rhyodacite and andesite.

During active mining, composite samples were collected from each pit, to include both ore and waste rock, and subjected to acid-base accounting (ABA) analysis and humidity cell testing; These tests indicated that sulfides were present in both the ore and waste rock.

Pits:

Ore and waste was mined from four separate pits, the Sheet-Ish, Combination, Red Top and Jumbo pits. These pits are located in the Goldfield historical mining district. Three pits remain as open pits while the Sheet-Ish pit has been backfilled and regraded.

Table 1 below provides approximate pit dimensions.

Table 1. – Approximate Goldfield Project Open Pit Dimensions

Pit	Length, feet	Width, feet	Acres
Combination	850	775	15.1
Jumbo	1000	350	7.9
Red Top	1525	700	24.9

None of the pits intercepted the groundwater table and no dewatering of the pits was required during active mining.

Closure monitoring of the Combination, Red Top and Jumbo pits will require an annual inspection (Spring) of the pits for ponded water, and, if ponded water is present, to take a field pH, field specific conductance, photos, and a water quality sample (Profile I). The Permittee will also be required to inspect annually (Spring) all pits for surface run-on controls, stability, safety and access restriction.

Waste Rock Dump:

The site consists of a single main waste rock dump - the Red Top dump. This dump contains approximately 5,500,000 tons of material. Because known sulfide waste was being excavated and relocated into a waste rock dump, a waste dump management plan was put into place. This plan involved the placement of the highly acid generating material in the interior of the dump with less acid generating material being placed at the edges of the dump, resulting in encapsulation of the higher acid generating material in the center of the dump.

Studies concluded that the majority of the moisture received by the site during the winter months would be consumed by evapotranspiration and/or sublimation or will runoff the surface. No drainage through the main waste dump is expected. To date, no discharge or drainage from the waste dump has been noted.

The Permittee will be required annually (Spring) to inspect the waste rock dumps for physical stability and, should seepage be present from any portion of the waste rock dump, take a field pH, field specific conductance, photos and a water quality sample (Profile I).

Heap Leach Pad:

Approximately 1,800,000 tons of ore was processed on the single heap leach pad. Material was mined from the four open pits and historic waste dumps. The heap contains three cells. All ore placed on the pads was crushed, ranging from 3/8 inch to 3 inch, with approximately 1.3M tons agglomerated with 10 – 15 lbs/ton cement and the last 500,000 tons agglomerated using lime and Betz non-ionic polymer at rates of 16 lbs/ton and 0.5 lbs/ton respectively.

The three cells were designated as Pads A, B and C. Both Pads A and B were constructed using 30-mil PVC as the primary liner. Pad C was constructed using 60-mil HDPE as its primary liner. Pads A and B contain interior PVC liners above the primary liner. Pads A and B do not have leak detection systems.

Additional details are provided below:

Pad A – In addition to the primary liner, this leach pad has up to five interior liners located above the primary liner and it is not known if they are connected in the interior of the pad. The estimated volume of the ore is 130,000 tons.

Pad B – This leach pad has one additional interior liner, located approximately 30 feet above the primary liner. This additional 30-mil PVC liner is mechanically connected to the 60-mil HDPE liner of Pad C. The estimated volume of ore is 450,000 tons.

Pad C – This leach pad is constructed using one continuous 60 mil HDPE primary liner, with the surface of the pad being bowl-shaped. It is connected to the intermediate liner of Pad B. The pad sub-base was constructed using compacted Columbia Tails. The pad liner is a combination of compacted soils and synthetic membrane. A leak detection and solution recovery system, comprised of a grid of HDPE net and geotextile that drains by gravity to a sump, is between these liners. The estimated volume of ore is 1,220,000 tons. The leak detection system remains functional and dry.

The heap was closed in 1999, covered with a nominal 12” clay cap and nominal 12” topsoil cover. Heap leach draindown currently reports to an evaporation pond that was constructed in the location of the storm event pond. The draindown rate, as of Fall 2005, is approximately 0.25 gallons per minute (GPM). The long-term steady state flowrate was modeled to be less than 0.5 GPM after 10 years.

Heap draindown chemistry has been sampled and analyzed since heap closure. Review of this data indicates consistently increasing concentrations of various constituents including aluminum, cadmium, chloride, copper, fluoride, iron, magnesium, manganese, nickel, and nitrate, selenium, sulfate, TDS and zinc; these increases coincide with decreasing flow. This data, taken on a mass-loading basis, represents a fairly consistent discharge. Effluent pH is consistently in the 4.0 – 4.3 s.u. range indicating the acidic nature of the heap material. Current concentrations for the above-mentioned constituents: aluminum (170), cadmium (0.22), chloride (980), copper (47), fluoride (5.40), iron (0.66), magnesium (230), manganese (24), nickel (1.40), nitrate (200), selenium (0.38), sulfate (4500), TDS (8600) and zinc (39). All results are presented in mg/L unless otherwise stated and represent approximate values.

Post-closure monitoring of the heap leach facility will consist of semi-annual sampling and analysis of the draindown solution for an NDEP Profile II analysis and flowrate. The Permittee will also be required to monitor the pad leak detection. At this time, WAD

cyanide analysis is not required; If the draindown solution pH increases to greater than 7 s.u., the Permittee will be required to begin analysis for WAD cyanide.

Process Ponds:

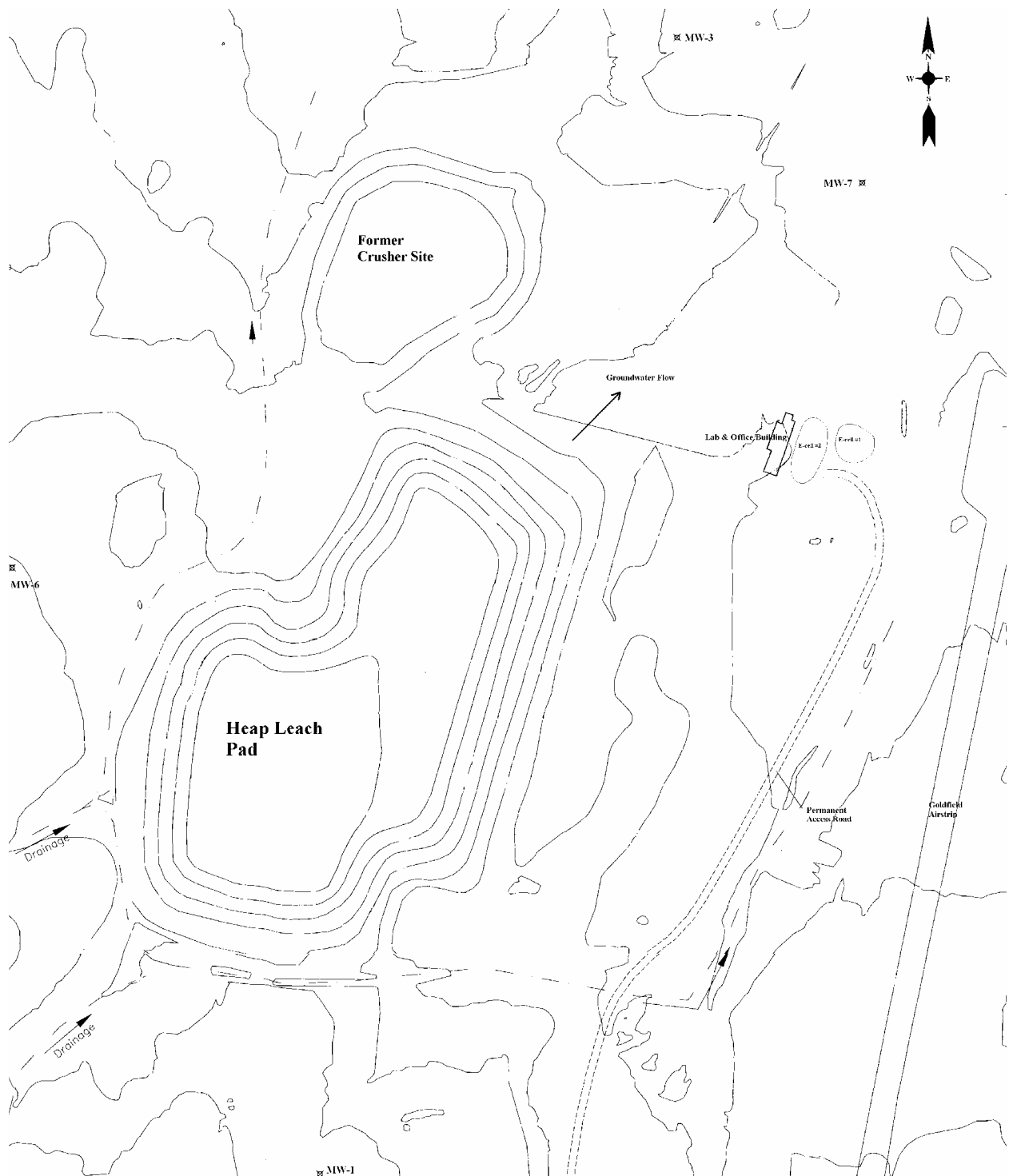
There were a total of four ponds on site – the precipitation, barren, pregnant and storm event. The precipitation pond was closed in-place by folding the liner in on itself and placing topsoil over the entire area. The barren and preg ponds, which contained significant amounts of sludge, were sampled and closed in place by placement of a clay cap overlain by topsoil and geomembrane. All ponds, with the exception of the storm event pond, had leak detection systems which consisted of gravel filled sumps. All leak detection systems were closed and covered during closure activities.

The original storm event pond was constructed by placing 60-mil HDPE liner over a native compacted engineered sub-base of fine soil (clay). During closure, the embankment of the storm event pond was decreased by six feet and backfilled and a small double-lined evaporation cell (e-cell) with dual leak detection was developed. During construction of the e-cell, the upper 60-mil liner was leak tested, the leak detection system was installed and a new 40-mil HDPE primary liner was installed. The leak detection system is comprised of a laterally-permeable geogrid and a 1-½” diameter inspection port terminating at the pond berm. Additionally, a second 1-½” diameter inspection port was installed below the bottom liner, terminating approximately 1 to 2 feet below the clay liner; To date, neither leak detection port has indicated leakage. As backfilling of the e-cell commenced, a 4” diameter piezometer was installed to collect and monitor solution levels as necessary.

Since closure of the heap in 1999, draindown flowrate has decreased from approximately 1 GPM to 0.25 GPM. Since October 2004, draindown has been discharging to the e-cell. Prior to this, for approximately 3 years, from October 2001 thru October 2004, draindown solution was discharged directly to the City of Goldfield sewer system. This practice was terminated when the City of Goldfield sewer permit underwent renewal and it was determined by the NDEP-BWQ that Goldfield could not accept industrial waste disposal into their system (open facultative ponds). Decommissioning Services LLC (DSL) has since constructed a second e-cell designed such that solution can flow between the two e-cells. The second e-cell, constructed as a double-lined pond with leak detection, consists of a 30-mil PVC liner overlain by 45-mil UV stable reinforced polypropylene (PPR) liner. The pond will remain open, i.e. – no backfill, to allow the operator to monitor the ponds functionality. Once the operator determines the pond is functioning as designed, infiltration galleries and a piezometer will be installed and the pond will be backfilled with gravel.

Monitoring of the long-term solution management system shall consist of semi-annual inspections of leak detection ports and piezometers related to the two e-cells.

Figure 1. Site Map



C. Site Hydrology and Background Characteristics

The mine facilities are located in an area of extensive historic underground mining disturbance.

Surface water resources in the project vicinity are extremely limited and there are no known surface waters within 5 miles of the site. The average annual precipitation at the mine site is 6.5 inches per year and the average pan evaporation is approximately 70 inches per year.

The regional ground water system exists at a depth of approximately 450 feet below the surface and lies in highly mineralized material. Ground water feasibility studies, based on samplings of shafts by the Southern Pacific Land Company in 1984, indicated a depth to water (DTW) of approximately 450 feet. These shafts, the Laguna, Silver Pick and Grizzly Bear are located ~ 4,500 feet southeast (SE), ~ 4,000 feet SE and ~ 9,250 feet SE, respectively, of the project site. Emission spectrographic results indicated high concentrations of copper, manganese, zinc and cobalt, an average pH of 2.5 and TDS of 2300 mg/L.

Within the heap leach pad/process area, the regional ground water table, despite exploration/condemnation drill holes to a depth of 340', was not encountered. However, a shallow local ground water zone (perched zone) exists beneath the site from 15 to 65 feet below the surface. In general, this perched zone meets Nevada drinking water standards.

The sites two production wells are located approximately 1,500 feet northeast of the heap/process facility. Depth to ground water ranges from 36 feet to 101 feet bgs. No current water quality data is available.

There are a total of seven shallow monitoring wells located around the heap/process area. These wells, in conjunction with topographic surveys, were used to determine groundwater flow direction. Inspection of the contour data indicated that ground water flows in a southwest to northeast direction. Four of these wells will be monitored in post-closure. MW-1 and MW-6 will provide background data while MW-3 and MW-7 are site downgradient wells.

Table 2 – Site Shallow Monitoring Well Data

Monitor Well I.D.	Total Depth, Feet	Depth to Water, Feet	Screen Interval	Location Relative to Components
MW-1	100	42	80 – 100	Upgradient
MW-3	100	11 – 14	80 – 100	Downgradient
MW-6	85	60 – 64	55 - 85	Upgradient
MW-7	77	21 – 22	47 – 77	Downgradient

All four monitoring wells will be sampled on a semi-annual (twice a year) basis for field pH, field specific conductance and depth to ground water. Additionally, the operator will provide a NDEP Profile 1 from each well once a year.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a permit authorizing the facility to close this mine subject to the conditions contained within the permit, is being sent to the [Central Nevada Newspaper/Tonopah Times-Bonanza and Goldfield News](#) in [Tonopah](#) for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing within a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, the regional administrator, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

The final determination of the Administrator may be appealed within 15 days of the decision to the State Environmental Commission pursuant to NRS 445A.605.

E. Proposed Determination

The Division has made the tentative determination to renew the proposed permit.

F. Proposed Effluent Limitations, Schedule of Compliance and Special Conditions

See Section I of the permit.

G. Rational for Permit Requirements

Although the shallow ground water regime immediately beneath the heap/process area appears to be a localized perched zone, the fact that the site production wells utilized this zone would indicate that this shallow zone is usable. Therefore, NDEP believes that the protection of this zone is desirable and that long-term heap draindown chemistry should not be allowed to degrade this water. As such, the NDEP concludes that long-term heap draindown should remain on containment (zero-discharge) via the E-Cells.

The primary means of identifying escaping solution will be placed on routine inspection of the facilities as required by the permit.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S.C. 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50CFR10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with state permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife. Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Blvd., Reno, Nevada 89502, (775) 861-6300, for additional information.